Scleral lenses in the management of ocular surface disease.

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Abstract

PURPOSE: To describe the management of ocular surface disease with commercially available scleral lenses.

DESIGN: Retrospective case series at a tertiary referral center.

PARTICIPANTS: A total of 212 patients (346 eyes) who were evaluated for scleral lens therapy for the management of ocular surface disease between June 1, 2006, and November 30, 2011.

METHODS: Retrospective review of medical records and analysis of a survey mailed to all patients who completed the scleral lens fitting process to evaluate the long-term success of scleral lens therapy in the management of ocular surface disease.

MAIN OUTCOME MEASURES: Therapeutic outcome of scleral lens therapy, improvement in visual acuity with scleral lenses, indications for scleral lens wear, and efficiency of fitting process.

RESULTS: Of the 212 subjects, 115 (188 eyes) successfully completed the scleral lens fitting process, and therapeutic goals (improved comfort, ocular surface protection, or resolution of keratopathy) were achieved in all but 2 of these subjects. Visual acuity improved with scleral lens wear, from 0.32 ± 0.37 logarithm of the minimal angle of resolution (logMAR) (mean ± standard deviation; Snellen equivalent, 20/42) with habitual correction to 0.12 ± 0.19 logMAR (Snellen equivalent, 20/26) with scleral lenses (P<0.001). The most common indications for scleral lens therapy were undifferentiated ocular surface disease, exposure keratopathy, and neurotrophic keratopathy. Subjects had attempted an average of 3.2 (range, 0-8) other forms of intervention before scleral lens wear. Scleral lens fitting was completed in an average of 3 visits (range, 2-6), with an average of 1.4 lenses/eye (range, 1-4). Three patients experienced complications during scleral lens wear that resolved without loss of visual acuity, enabling resumption of scleral lens wear.

CONCLUSIONS: Commercially available scleral lenses can be successfully used in the management of moderate to severe ocular surface disease. The scleral lens fitting process can be completed efficiently for most eyes by using diagnostic trial lenses. In addition to protecting the ocular surface, scleral lenses improve visual acuity in patients whose surface disease has compromised vision.

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